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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.          | CONFIRMATION NO.       |
|--|-------------|----------------------|------------------------------|------------------------|
| 10/767,843   | 01/29/2004  | James A. Proctor JR. | TAN-2-1408.01.US             | 2970                   |
| 24374 7590 06/27/2007<br>VOLPE AND KOENIG, P.C.<br>DEPT. ICC<br>UNITED PLAZA, SUITE 1600<br>30 SOUTH 17TH STREET<br>PHILADELPHIA, PA 19103 |             |                      | EXAMINER<br>MURPHY, RHONDA L |                        |
|  |             |                      | ART UNIT<br>2616             | PAPER NUMBER           |
|  |             |                      | MAIL DATE<br>06/27/2007      | DELIVERY MODE<br>PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/767,843

Applicant(s)

PROCTOR, JAMES A.

Examiner

Rhonda Murphy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/16/04</u> . | 6) <input type="checkbox"/> Other: ____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 11, 15 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. In claim 1, line 10, the limitation "a like number of reverse link signals" is vague and indefinite.
4. In claim 1, line 10, it is unclear as to what the term "each" is referring to.
5. In claim 1, line 19, the limitation "but using unique orthogonal codes" is vague and indefinite.
6. In claim 11, line 6, the limitation "a like number of reverse link signals" is vague and indefinite.
7. In claim 11, line 6, it is unclear as to what the term "each" is referring to.
8. In claim 11, line 13-14, the limitation "but using unique orthogonal codes" is vague and indefinite.
9. In claim 21, page 26, line 2, the limitation "a like number of reverse link signals" is vague and indefinite.
10. In claim 21, page 26, line 2, it is unclear as to what the term "each" is referring to.
11. In claim 21, page 26, line 10-11, the limitation "but using unique orthogonal codes" is vague and indefinite.

***Claim Objections***

12. Claim 5 is objected to because of the following informality:
13. Claim 5 recites the limitation "orthogonal timing controller" on line 4. Claim 1 recites a "timing controller". It is suggested to use either "timing controller" or "orthogonal timing controller" in order to maintain consistent claim language.
14. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1 – 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hadad (US 2007/0076583 A1).

**Regarding claims 1, 11 and 21**, Hadad teaches an apparatus for controlling timing of a reverse link signal from a subscriber unit in a multi-path environment, the apparatus (Fig. 7) comprising: a receiver (RC 15) in a base station (base station 1) that receives a reverse link signal, including a common code and a unique orthogonal code (page 7, paragraphs 147-148), that travels on a primary path and at least one secondary path from a given subscriber unit to the base station (page 3, paragraph 55) and is received as a like number of reverse link signals, each including the common code and unique orthogonal codes (page 7, paragraphs 147-148); a correlator (Fig. 17; FFT 703) coupled

to the receiver that associates a metric with each of the received reverse link signals (pages 11-12, paragraphs 253-256); a selector that selects the received reverse link signal associated with a best metric (pages 11-12, paragraphs 255-256); and a timing controller (MM 7041) coupled to the selector that determines a gross timing offset of the selected reverse link signal to align the selected reverse link signal with reverse link signals from other subscriber units using the common code with a common phase but using unique orthogonal codes (page 12, paragraph 269).

Hadad fails to explicitly disclose a selector coupled to the correlator.

However, it is well known in the art for selectors to couple correlators, in order to select a signal after a correlation process is performed on the received signals.

**Regarding claims 2 and 12**, Hadad teaches the apparatus and method according to claims 1 and 11, wherein the timing controller determines a fine timing offset and causes a fine phase adjustment of the common code of the selected reverse link signal (page 11, paragraphs 253-255).

**Regarding claims 3 and 13**, Hadad teaches the apparatus and method according to claims 1 and 11, wherein the timing controller provides the gross timing offsets to the subscriber unit in the form of a timing command (page 12, paragraph 269).

**Regarding claims 4 and 14**, Hadad teaches the apparatus and method according to claims 1 and 11, wherein the timing controller provides the gross timing offsets to the subscriber unit in the form of a timing report (page 12, paragraph 269).

**Regarding claims 5 and 15**, Hadad teaches the apparatus and method according to claims 1 and 11, wherein the selector determines whether a reception quality criterion is

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met and, if met, causes the orthogonal timing controller to align an unaligned reverse link signal from the given subscriber unit with reverse link signals from other subscriber units (pages 11-12, paragraphs 255-256).

**Regarding claims 6 and 16**, Hadad teaches the apparatus and method according to claims 5 and 15, wherein the reception quality criterion includes at least one of the following: (a) the metric of an un-aligned reverse link signal exceeds a threshold for a predetermined timespan, (b) the metric of an un-aligned reverse link signal exceeds a threshold relative to the best metric for a predetermined timespan, (c) the best metric drops below an absolute metric, and (d) the metric of an un-aligned reverse link signal exceeds an absolute metric (pages 11-12, paragraphs 255-256).

**Regarding claims 7 and 17**, Hadad teaches the apparatus and method according to claims 6 and 16, wherein the metrics include at least one of the following: (a) power, (b) SNR, (c) variance of the power, (d) variance of the SNR, (e) relative ratio of the power, SNR, or variance of two paths, (f) bit error rate, and (g) energy per chip divided by the interference density ( $E_c/I_o$ ) (pages 11-12, paragraphs 255-256).

**Regarding claims 8 and 18**, Hadad teaches the apparatus and method according to claims 1 and 11, further including a power controller (APC 874) that determines a power level of the aligned reverse link signal and provides feedback of the power level to the subscriber unit (page 13, paragraphs 284-285).

**Regarding claims 9 and 19**, Hadad teaches the apparatus and method according to claims 8 and 18, wherein the power controller provides the power level to the subscriber unit in the form of a power command (page 13, paragraphs 284-285).

**Regarding claims 10 and 20**, Hadad teaches the apparatus and method according to claims 8 and 18, wherein the power controller provides the power level to the subscriber unit in the form of a power report (page 13, paragraphs 284-285).

### ***Conclusion***

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Preuss et al. (US 6,590,889).
- Hall et al. (US 2002/0071384 A1)
- Walton et al. (US 2003/0128658 A1)
- Roh et al. (US 6,249,517)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda Murphy whose telephone number is (571) 272-3185. The examiner can normally be reached on Monday - Friday 9:00 - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Rhonda Murphy  
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